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Smart 216 / 232

User Guide

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1. Welcome

Thank you for buying the Smart 216 / 232 system. This system is produced by Minicom Advanced Systems Limited.

This document provides installation and operation instructions for Minicom's Smart 216 / 232. It is intended for system administrators and network managers, and assumes that readers have a general understanding of networks, hardware and software.

Technical precautions

This equipment generates radio frequency energy and if not installed in accordance with the manufacturer's instructions, may cause radio frequency interference.

This equipment complies with Part 15, Subpart J of the FCC rules for a Class A computing device. This equipment also complies with the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. These above rules are designed to provide reasonable protection against such interference when operating the equipment in a commercial environment. If operation of this equipment in a residential area causes radio frequency interference, the user, and not Minicom Advanced Systems Limited, will be responsible.

Changes or modifications made to this equipment not expressly approved by Minicom Advanced Systems Limited could void the user's authority to operate the equipment.

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2. Introduction

All references throughout this guide to the Smart 216 refer equally to the Smart 232. The two units are functionally the same. The Smart 216 has 16 Server ports and the Smart 232 has 32 Server ports.

The Smart 216 extends your KVM (keyboard, video, and mouse) from servers with PS/2 or USB interfaces up to 30m/100ft away. 2 users can control, monitor and manage up to 16 servers simultaneously. You can connect a Power Distribution Unit (PDU) for power management.

The Smart 216 is a cost-effective hardware solution, for secure KVM access & control of 16 (32 for the Smart 232) computers/servers from the BIOS level - independent of the operating system.

The Smart 216 is based on Minicom's innovative ROC technology in whereby computer/server is directly connected to the switch via ROC dongles using only standard CAT5 cable at a distance of up to 30m/100ft in a star configuration. No external power is needed at the ROC.

3. Key features

Compatible with all major operating systems.

Security - Supports advanced OSD management with multi-layer security for local users.

Seamless power control – with Minicom's Serial Remote Power Switch.

4. System components

The system consists of:

- 1 Smart 216 (p/n 1SU22090) or 1 Smart 232 (p/n 1SU22091)
- Rack mounting set (p/n 5AC20247)
- ROCs - PS/2, USB

5. Compatibility

The Smart 216 is compatible with:

- With PS/2 or USB interface computers/servers
- VGA, SVGA, or XGA monitors (UXGA and higher)
- Windows, Linux and other major operating systems

6. The Smart 216 unit

Figure 1 illustrates the front panel of the Smart 216.

Figure 1 Smart 216 ports – side 1

6.1 LED and button table

LED	Function
Power	Power Indicator
Link	Unit is connected to the network
Remote 1 and 2	Illuminates when the respective user connects to a server

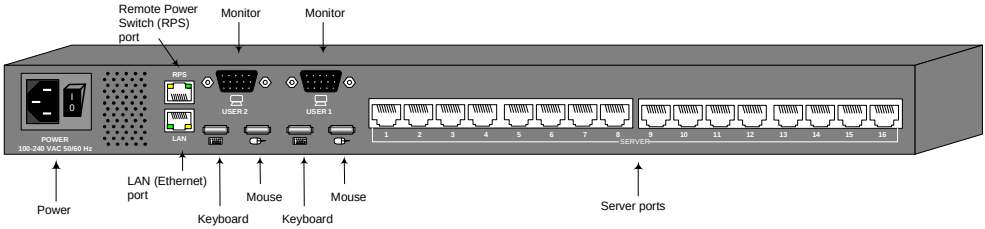


Figure 2 Smart 216 ports – side 2

6.2 Connector table

Connector	Function
User 1 and User 2 KVM consoles	Connect 2 KVM consoles for two users to operate the Smart 216
RPS	Connect Minicom's Serial Remote Power Switch
LAN	To configure and update the unit, connect to 10/100 Mbit Ethernet.
Server ports	Connect to servers via ROCs

7. Pre-installation guidelines

- Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise
- Place the Smart 216 on a flat, clean and dry surface or install in a rack
- Ensure that the maximum distance between each computer and the Smart 216, does not exceed 30m/100ft.

7.1 Avoiding general rack mounting problems

Elevated operating ambient temperature

The operating ambient temperature of the rack environment may be greater than the room ambient when installing into a closed or multi-unit rack assembly. So install the equipment in an environment compatible with the maximum rated ambient temperature.

Reduced airflow

Install the equipment in a rack in such a way that the amount of airflow required for safe operation is not compromised. Leave a gap of at least 5cm/2” each side of the Smart 216.

Mechanical loading

Mount the equipment in the rack in such a way that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit overloading

When connecting the equipment to the supply circuit, consider the effect that overloading of circuits might have on over-current protection and supply wiring.

Reliable earthing of rack-mounted equipment should be maintained. Give attention to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

7.2 Rack mounting the Smart 216

Rack mount the Smart 216 using the supplied Rack-mount kit. The brackets can be placed in 2 possible positions, see Figure 3.

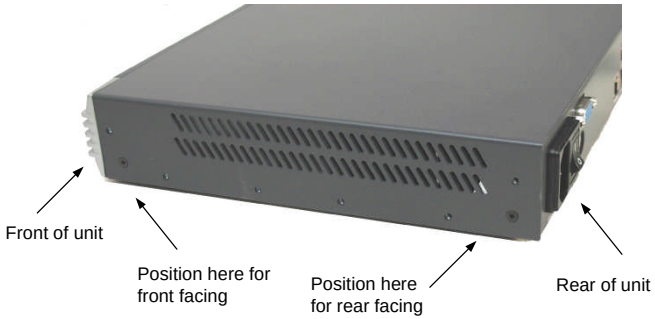


Figure 3 Bracket positions

Place the brackets towards the front of the unit so that the unit can be mounted front facing, or place the brackets towards the rear of the unit so that the unit can be mounted rear facing. Figure 4 illustrates the bracket connected for rear facing. Screw the bracket to the Smart 216 using the screws provided.

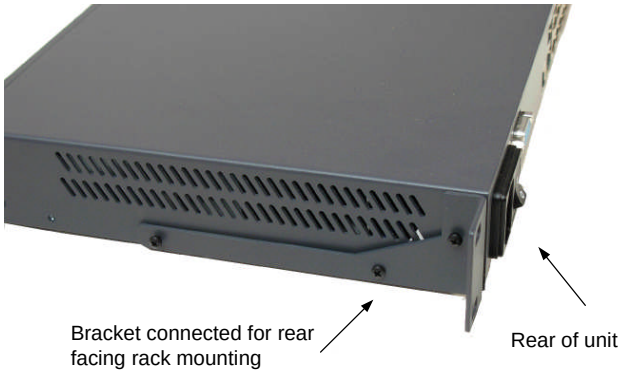


Figure 4 Bracket connected

8. Connecting the system

Figure 5 illustrates the Smart 216 system overview.

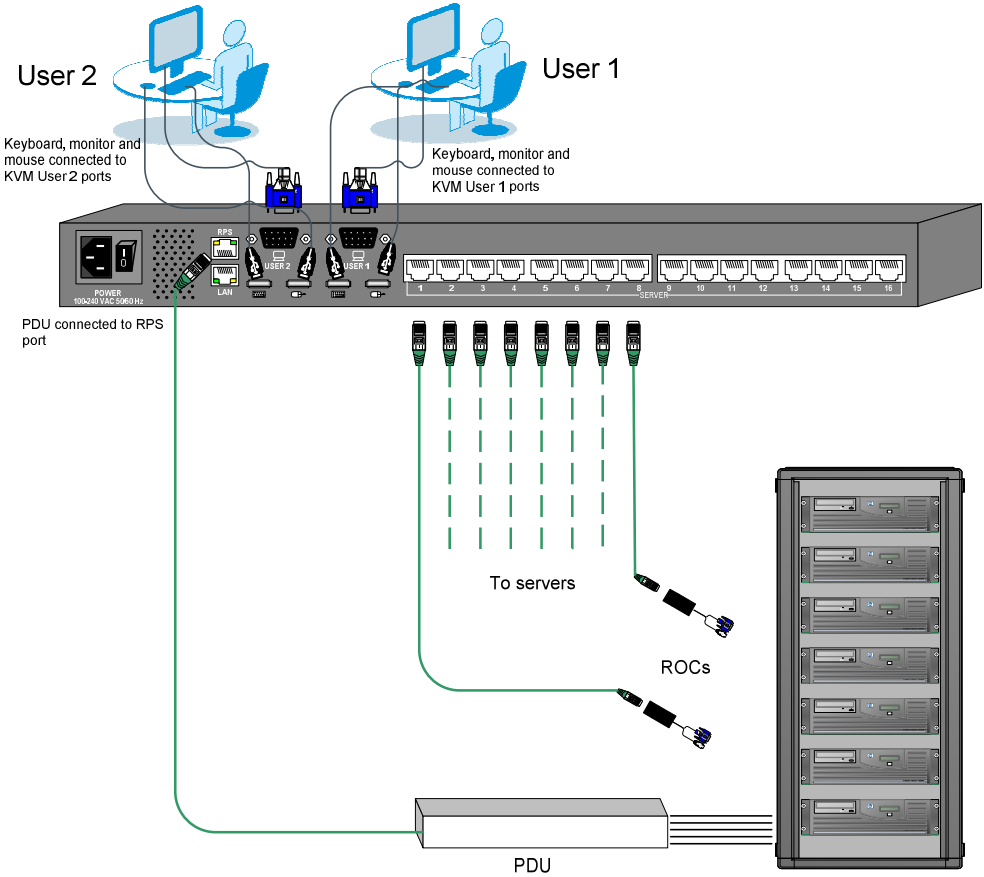

User 2
User 1
Keyboard, monitor and mouse connected to KVM User 2 ports
Keyboard, monitor and mouse connected to KVM User 1 ports
PDU connected to RPS port
To servers
ROCs
PDU

Figure 5 Smart 216 system overview

8.1 The ROCs

Each computer/ server is directly connected to the Smart 216 via the appropriate RoC using CAT5 cable in a star configuration. No external power is needed at the ROCs. The ROCs draw their power from the computer's keyboard port (ROC PS/2) or from the USB port (ROC USB). The figures below illustrate the ROC PS/2 and ROC USB.

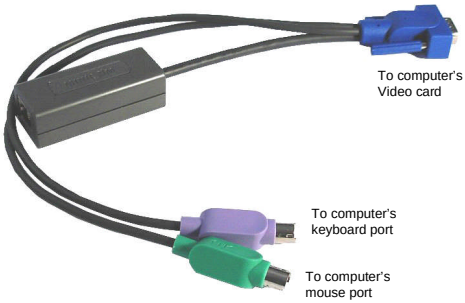


Figure 6 ROC PS/2

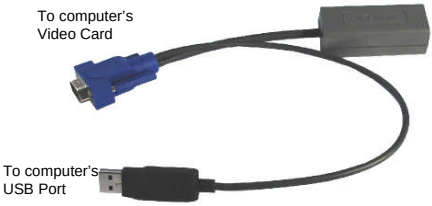


Figure 7 ROC USB

8.1.1 Connecting a ROC PS/2

1. Switch off the server.
2. Connect the ROC PS/2. Figure 8 illustrates the ROC PS/2 connections.
3. Power on the server.

You can connect the ROC PS/2 to a powered on computer, but it must be in the following order:

1. Connect the Mouse connector to the computer's Mouse port.
2. Connect the Keyboard connector to the computer's Keyboard port.
3. Connect the Screen connector to the computer's Video port.

Failure to connect in the above order while the server is running, may lead to the mouse malfunctioning until the server is rebooted.

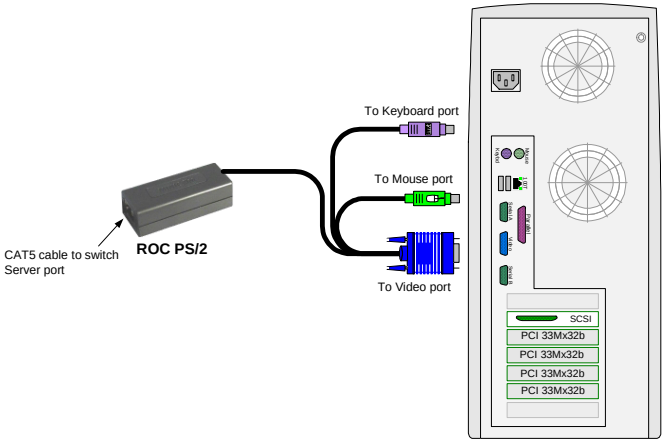


Figure 8 ROC PS/2 connections

8.1.2 Connecting a ROC USB

The ROC USB supports Windows 98 SE and later, MAC, SUN and SGI, and all modern Linux distributions. Figure 9 illustrates the ROC USB and its connections.

To connect the ROC USB:

1. Connect the Screen connector to the computer's Video port.
2. Connect the USB connector to the computer's USB port.

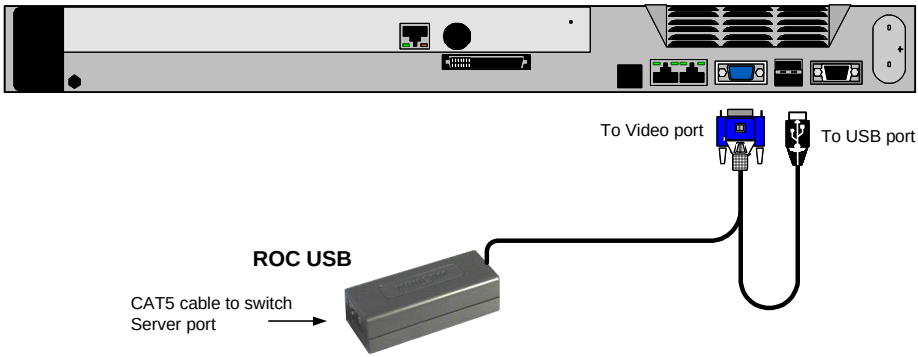


Figure 9 ROC USB

8.2 Connecting the CAT5 cables

1. Connect one connector to the ROCs RJ45 port.
2. Connect the other connector to one of the Smart 216's Server ports.
3. Follow the above 2 steps for each computer.

8.3 Connecting the two KVM consoles

Connect a keyboard, monitor and mouse to each of the User 1 and User 2 ports as follows:

1. Connect the monitor connectors to the Monitor ports.
2. Connect the USB keyboard connectors to the USB Keyboard ports.
3. Connect the USB mouse connectors to the USB Mouse ports.

8.4 Connecting to the power supply

1. Using the Power cord provided, connect the Smart 216 to a socket outlet with grounding connection. Only use the power cord supplied with the unit.
2. Switch on the Smart 216.

9. Configuring the system

Configuring the system includes:

- Assigning server names
- User and security settings
- Maintenance

9.1 Connecting to the Local Area Network (LAN)

Configuration is done mainly via a web interface. For this purpose connect a network cable to the LAN port of the Smart 216. This must be done before powering on the Smart 216.

9.2 Setting network parameters via the OSD

By default, Smart 216 boots with an automatically assigned IP address from a DHCP (Dynamic Host Configuration Protocol) server on the network. The DHCP server provides a valid IP address, gateway address and subnet mask.

You can identify the IP address from the OSD. Also where there is no DHCP server set the IP address via the OSD as follows:

1. From the local keyboard, press left **Shift** twice. The OSD Main window appears. See Figure 10.

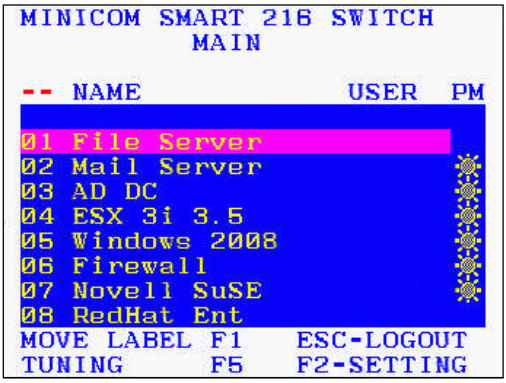


Figure 10 OSD Main window

2. Press **F2**. The Settings window appears see Figure 11.

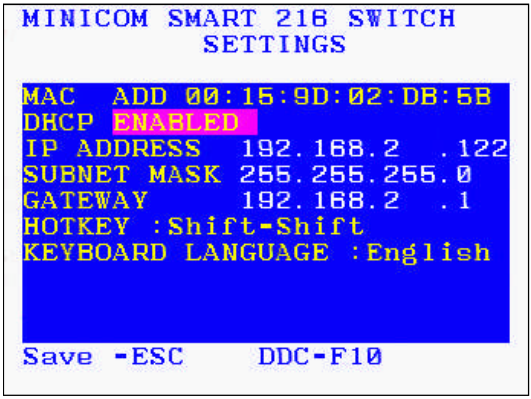


Figure 11 Settings window

In the Settings window you navigate downwards using the Tab key. At the bottom of the window, press tab to go to the top of the window. Change settings by typing in the selected area or by pressing the spacebar – whichever is relevant.

9.2.1 Changing the Network parameters

DHCP Enable – When a DHCP server is active on the same network to which Smart 216 is connected, DHCP provides automatic IP assignment. (Displayed in the OSD).

When DHCP is disabled – (Recommended) – You can assign a fixed IP address to the Smart 216. Consult your Network Administrator regarding the use of the DHCP.

When DHCP is disabled, enter the **IP Address, Subnet Mask,** and **Gateway** as given by your Network Administrator.

Once the IP address is satisfactory, press ESC twice to save changes and restart the unit. You can now log into the web interface to complete the configuration, as explained below.

(Network parameters can also be changed from the web interface as explained on page 14).

10. Logging into the web configuration

1. Open your web browser.
2. Type the Smart 216 system IP address – http or https://*IP address*/ - and press **Enter**. The login page appears.
3. Type the default Administrator user name **- admin -** and password **- access -** (both lower case).
4. Press **Enter**. The web interface opens at the Targets page. See Figure 12.

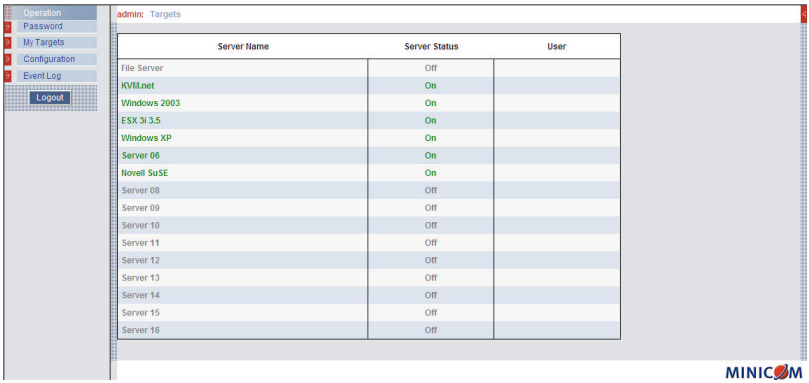


Figure 12 Targets page

Columns:

Server name - The server name can be changed in the configuration settings to give the server an identifiable name.

Server Status - Server Status can be on, off or busy (i.e. a user is accessing the server).

User – The current user (if any) accessing the server.

From the Targets page menu - see Figure 12 - an Administrator can:

- Change the password
- Reach the configuration pages
- See an event log (explained on page 25)

10.1 Changing the password

To change the password, from the menu click **Password**, the following appears.

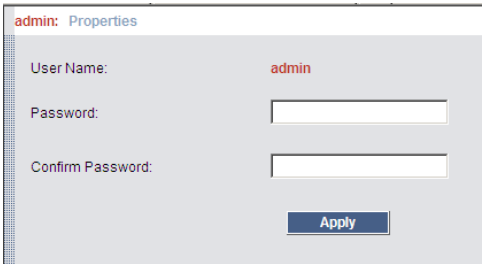


Figure 13 Properties

Type a new password according to the password policy set - see page 20. Click **Apply**.

11. Configuring the system

From the menu, click **Configuration**. The Network > Configuration appears, see Figure 14.

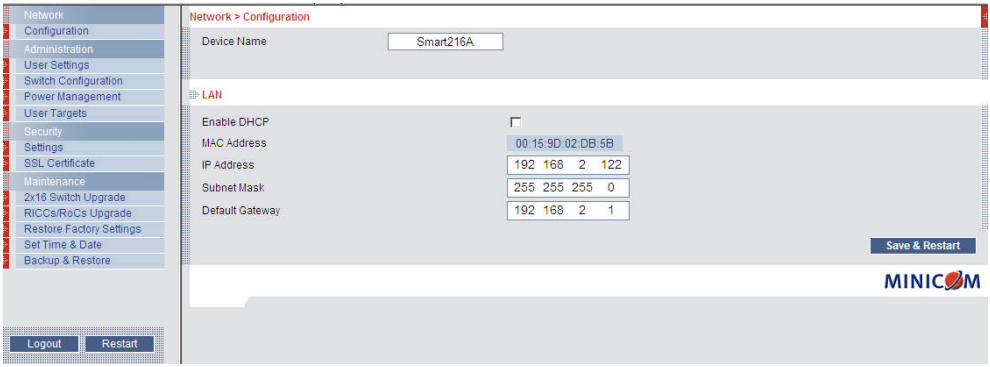


Figure 14 Network > Configuration page

11.1 Network > Configuration

Consult your Network Administrator for the network settings.

Device name - Type a name for the Smart 216.

11.1.1 LAN

In the LAN section – see Figure 14 – is the following:

Enable DHCP – When a DHCP server is active on the same network to which Smart 216 is connected, DHCP provides automatic IP assignment.

When DHCP is disabled – (Recommended) – You can assign a fixed IP address to the Smart 216.

Consult your Network Administrator regarding the use of the DHCP.

When DHCP is disabled, enter the **IP Address, Subnet Mask,** and **Default Gateway** for **LAN**, as given by your Network Administrator.

These parameters can be configured locally from the OSD as explained on page 11.

11.2 Administration > User Settings

From the menu click **User Settings**, Figure 15 appears.

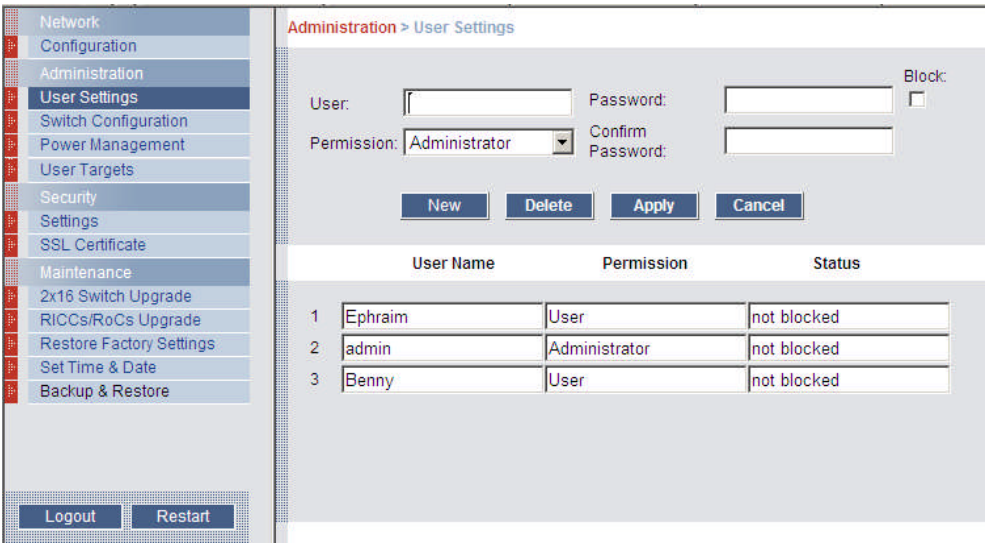


Figure 15 User Settings

On this page an Administrator creates or deletes users.

There are 3 levels of user access:

- Administrator
- User
- View only

Administrator

An Administrator has unrestricted access to all windows and settings. An Administrator can change the name and password and server access permissions of all users.

User

A User can access/control permitted servers. A User has no access to the web configuration interface.

View only

View only can view the screen of the currently accessed server without keyboard and mouse control.

11.2.1 Adding a user

To add a user:

1. Click

and type a name and a password. The password must be at least 6 characters – letters or numbers, and must not include the user name, even if other characters are added.

   Note! The following “special” characters: &, <, >, ” cannot be used for either the user name or password.

   Depending on the security level chosen the user name and password parameters are different. See section 13 on page 20.

2. Select the permission type from the **Permission** box.

3. Click

, the user appears in the list of users. The Permission column shows the user level (Administrator, User, View Only). The Status column shows whether the user is blocked or unblocked, explained in section 11.2.3 below.

11.2.2 Deleting a user

To delete a user:

1. Select the user from the list.

2. Click

.

3. Click

, the changes are saved.

11.2.3 Blocking a user

An alternative to deleting a user is blocking a user. This means that the user’s name and password is stored, but the user is unable to access the system. Check **Block** to block a user. Uncheck **Block** to allow the user access.

11.3 Administration > Switch Configuration

Assign unique names to the servers connected to the Smart 216, so that users accessing the system can identify the servers easily.

To do so:

1. From the menu click **Switch Configuration**. The **Switch Configuration** window appears, see Figure 16.

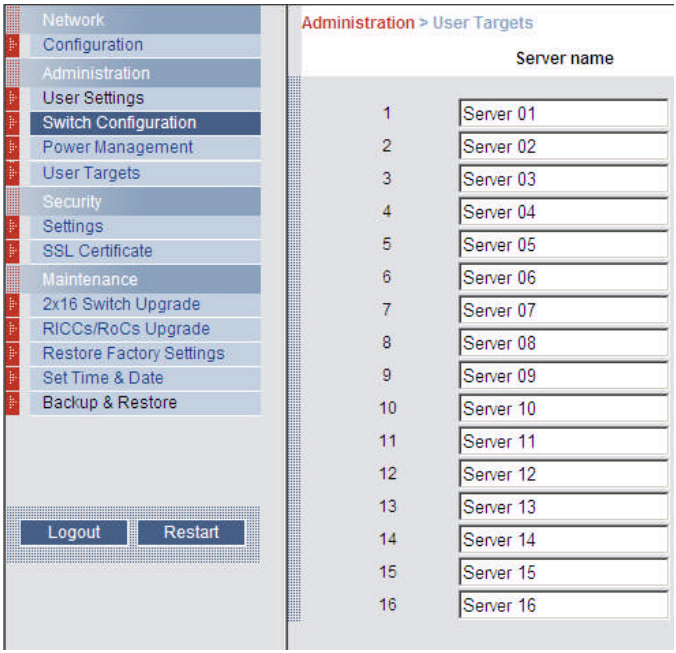


Figure 16 Switch Configuration

2. In the **Server Name** section change the name of the connected servers by selecting the server name and typing a new name. Click Apply to save changes.

11.4 Administration > Power Management

Where you have a Minicom Serial Remote Power Switch (SRPS), connect it to the RPS port of the Smart 216.

Configure the Power Management switch as follows:

1. From the menu, click **Power Management**. The **Power Management** window appears, see Figure 16.

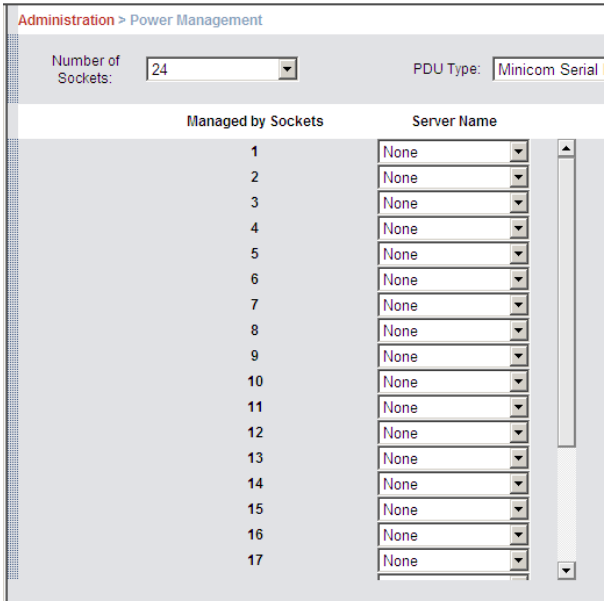


Figure 17 Power Management

2. Select the number of sockets on the power management switch in the Number of Sockets drop-down menu (SRPS has 8)
3. Click Apply. The appropriate number of **Managed by Sockets** and **Server Name** drop-down menus appear.
4. Select the PDU type (default is SRPS).
5. Match the sockets to the servers. For each socket select the server name connected to it from the drop-down menu.

When there is a double or triple power supply, you need to assign multiple sockets to the same KVM port.

12. Administration > User Targets

Define the access rights of each user separately.

To do so:

1. From the menu click **User Targets**. The **User Targets Configuration** window appears, see Figure 18.

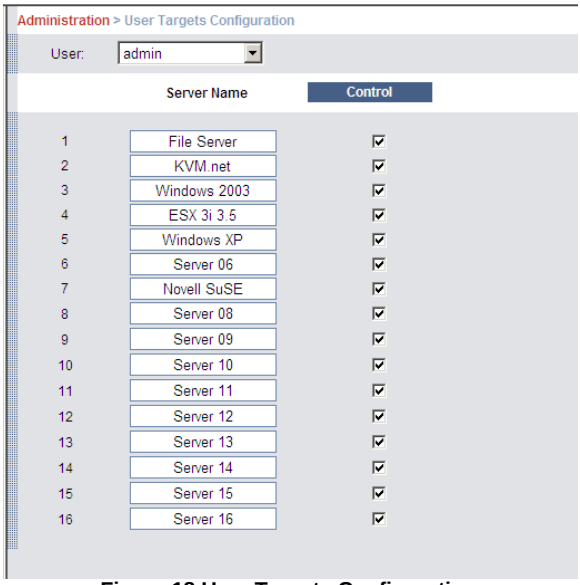


Figure 18 User Targets Configuration

2. Select a user from the **User** drop-down menu.
3. Check the servers the user can access (according to his access permissions). To select all servers, press Control.
4. Click **Apply**, the selection is saved.
5. Repeat the above steps for other users.

13. Security > Settings

Configure the security features, such as Account Blocking, Password Policy and Idle Timeout, as explained below.

From the **Security** section click **Settings**, the **Security Settings** appear, see Figure 19.

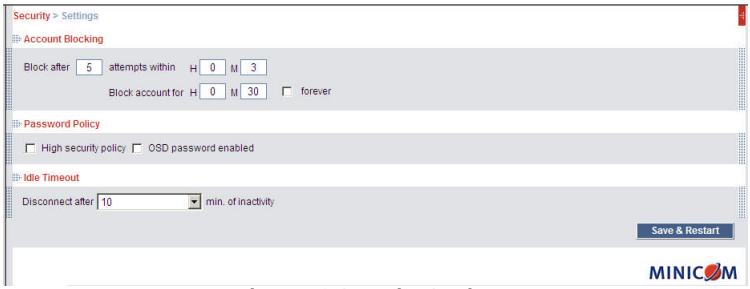

Security > Settings
Account Blocking
Block after 5 attempts within H 0 M 3
Block account for H 0 M 30 forever
Password Policy
High security policy OSD password enabled
Idle Timeout
Disconnect after 10 min. of inactivity
Save & Restart
MINICOM

Figure 19 Security Settings

The Security Settings fields:

Account Blocking – decide on the number of attempts to login with a wrong username or password after which there is a time lock or a total block.

Password Policy

For OSD and web configuration access you have the option of a standard or high security level of password. The table below shows the parameters of the 2 options.

Standard security policy	High security policy
6 characters or more	8 characters or more must include at least 1 digit and 1 upper case letter and 1 “special” character as follows !@#$%^*()_-+=[]’:;?/{}
Must not include the user name	Must not include the user name

Check the box to enable the high security password policy. Unchecked, the standard security policy applies.

OSD password enabled - Access to the OSD can be password enabled or disabled (default), with the option of a standard or high security level of password as explained above. Select the checkbox to enable password security. **Note!** All user and server security settings depend on the OSD Password being enabled.

Idle Timeout – Select the Timeout inactivity period after which the user is disconnected from the system. Choose **No Timeout** to disable Timeout.

14. Security > SSL Certificate

You can install an SSL certificate.

To do so:

From the menu, select **SSL Certificate**, the install **SSL Certificate** page appears, see Figure 20.

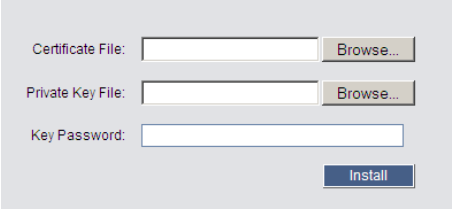


Figure 20 Install SSL Certificate page

Certificate File - Browse to locate the **cer** file (.ssl format).

Private Key File - Browse to locate the **private key** file (.pem format).

Key Password – Type the Key password.

Click Install. The certificate installs. The device restarts automatically.

15. Maintenance > Switch Upgrade

Upgrade the Smart 216 firmware to take advantage of new features. Download the firmware from the Support section of Minicom's website –www.minicom.com. Save the firmware file on the Client computer.

From the menu select Switch Upgrade. The Upgrade window appears showing the current firmware version see Figure 21.

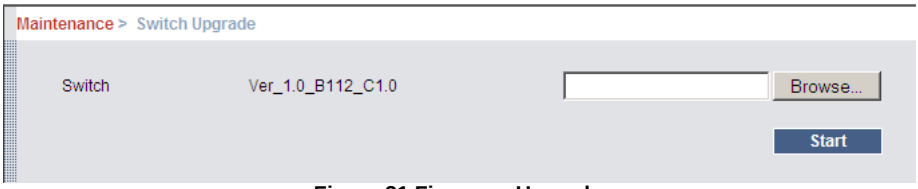


Figure 21 Firmware Upgrade

1. Locate and upload the firmware file.
2. Click Start. The upgrade starts. The unit reboots automatically. After about 5 minutes the Login page appears.

16. Maintenance > RICCs/RoCs Upgrade

Upgrade the ROC firmware to take advantage of new features. Download the firmware from the Support section of Minicom's website –www.minicom.com. Save the firmware file on the Client computer.

1. From the menu select **RICCs/RoCs Upgrade**. The **RICCs/RoCs Upgrade** window appears showing the current firmware version see Figure 22.
2. Select the servers connected to the ROCs you wish to upgrade. Click

to select all.
3. Verify the current version of the firmware by pressing

.
4. Locate and upload the firmware file.
5. Press

, the firmware upgrades.

Figure 22 RICCs/RoCs Upgrade

17. Restore Factory Settings

You can restore the Smart 216 unit to the factory settings. This restores the original Smart 216 parameters, resetting all the information added by the administrators, including: Network settings*, servers, users, and passwords etc.

* You have the option to preserve network settings – explained below.

Warning! Once reset the data cannot be retrieved.

To restore factory settings:

1. From the menu select **Restore Factory Settings**. **Restore Factory Settings** appears see Figure 23.

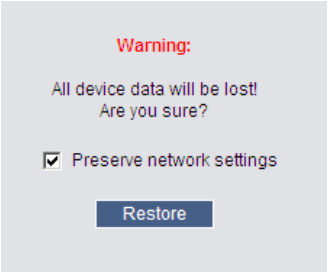


Figure 23 Restore factory settings

2. Check the box if you want to preserve Network settings.
3. Click Restore. The unit restarts.

18. Set Time & Date

The time and date set is used when recording log events (see page 25).

To set the time and date:

From the menu, select **Time & Date**, Figure 24 appears.

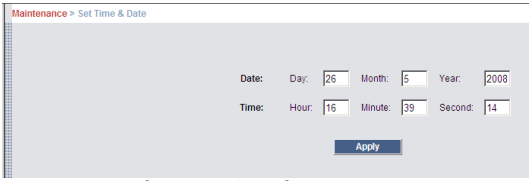


Figure 24 Set Time & Date

Type the appropriate parameters and click click Apply.

19. Backup & Restore

You can backup all configuration data and restore it at a later date. To do so:

From the menu select **Backup & Restore**, Figure 25 appears.

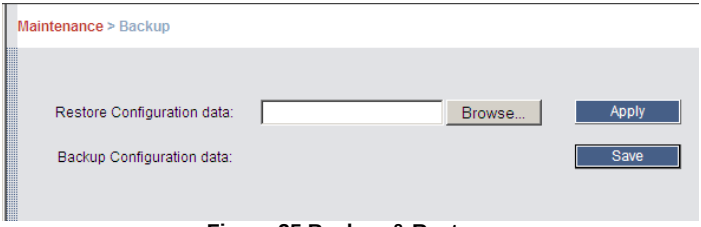


Figure 25 Backup & Restore

To backup the configuration data, click Save. And save the file.

To restore the configuration data, browse to locate the file and click Apply, the device restarts.

20. Saving changes and logging out

To save any configuration changes click the relevant button on the current page.

This could be Save & Restart or just Apply.

To restart the Smart 216 press Restart.

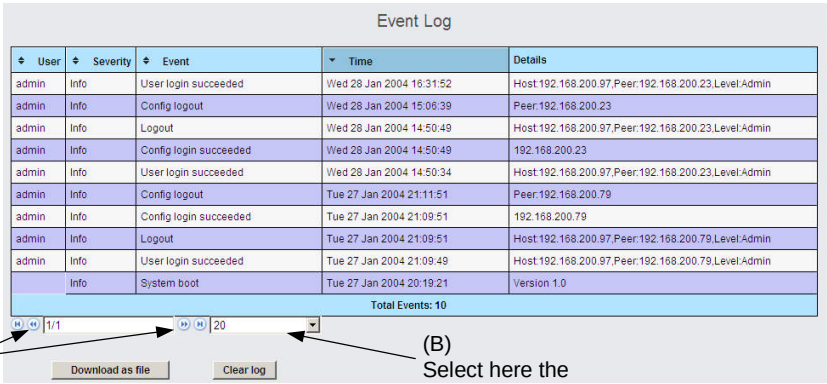
To exit the Configuration menu and close the session, click Logout.

Only one Administrator can log into the Configuration area at a time. After the idle Timeout – see section 13 page 20 – the session terminates.

21. Event log

To see a log of all system events:

From the **Targets** page menu – see Figure 12 on page 13 – select **Event Log**, the following appears.


Event Log
User
Severity
Event
Time
Details
admin Info User login succeeded Wed 28 Jan 2004 16:31:52 Host:192.168.200.97,Peer:192.168.200.23,Level:Admin
admin Info Config logout Wed 28 Jan 2004 15:06:39 Peer:192.168.200.23
admin Info Logout Wed 28 Jan 2004 14:50:49 Host:192.168.200.97,Peer:192.168.200.23,Level:Admin
admin Info Config login succeeded Wed 28 Jan 2004 14:50:49 192.168.200.23
admin Info User login succeeded Wed 28 Jan 2004 14:50:34 Host:192.168.200.97,Peer:192.168.200.23,Level:Admin
admin Info Config logout Tue 27 Jan 2004 21:11:51 Peer:192.168.200.79
admin Info Config login succeeded Tue 27 Jan 2004 21:09:51 192.168.200.79
admin Info Logout Tue 27 Jan 2004 21:09:51 Host:192.168.200.97,Peer:192.168.200.79,Level:Admin
admin Info User login succeeded Tue 27 Jan 2004 21:09:49 Host:192.168.200.97,Peer:192.168.200.79,Level:Admin
Info System boot Tue 27 Jan 2004 20:19:21 Version 1.0
Total Events: 10
1/1
20
Download as file
Clear log

(A) Where there are a number of pages, click forward or backwards here to navigate to the desired page

(B) Select here the number of events that should appear on each page

Figure 26 Events log

Navigate through the events pages using the forward or backward arrows, marked as (A) in Figure 26,

From the drop down menu, marked as (B) in Figure 26, choose the number of events that will appear on each page - between 10 – 40.

21.1.1 Downloading the log

You can download and save the log.

To do so, click Download as file and save as a .csv file. The file can be viewed using Microsoft Excel or compatible software.

21.1.2 Clearing the log

To clear the log, click Clear log. A prompt appears asking if you first want to save the log.

22. Operating the system via the OSD

To display the OSD:

1. From the local keyboard, press the left **Shift** key twice. The OSD Main window appears. See Figure 27.

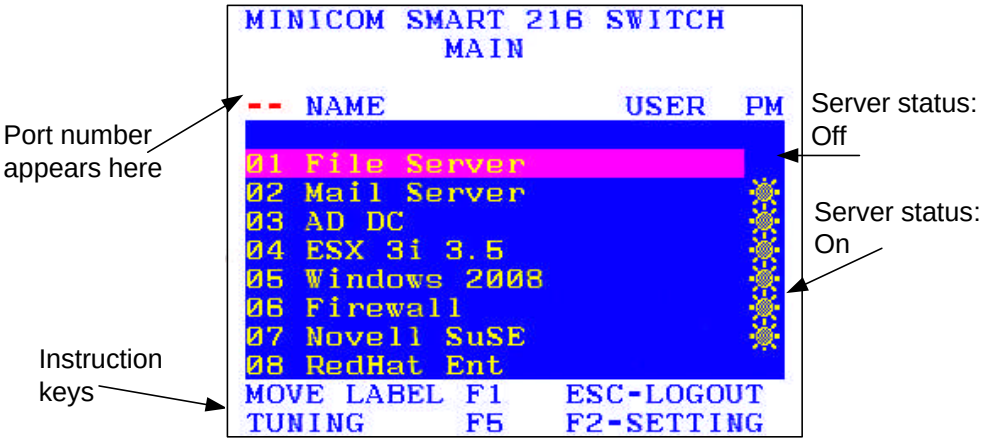


Figure 27 OSD Main window

22.1 Navigating the OSD Main window

To navigate up and down use the Up and Down arrow keys.

To exit the OSD press **Esc**.

22.2 Selecting a computer

To select a computer:

1. Navigate to the desired computer line.

   Or, type the two-digit port number of the desired computer.

2. Press **Enter**. The selected computer is accessed. A Confirmation label appears showing which computer is accessed.

22.3 Power management hotkey – left Shift, F12

To power manage a server connected to a power management switch:

1. Navigate to the computer line you desire to power manage.
2. Press left **Shift**, **F12**. The Power Control dialog box appears, see Figure 28. **Note**! If you change the OSD hotkey from **Shift**, **Shift** to **Ctrl**, **Ctrl**, then the power management hotkey becomes left **Ctrl**, **F12**.

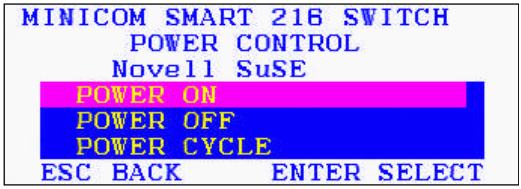


Figure 28 Power Control dialog box

3. Use the arrow keys to navigate up and down and press **Enter** to select the power option.
4. A prompt appear, see Figure 29. Select the desired option and press **Enter**. The power command is sent.

Figure 29 Power prompt

22.4 Moving the Confirmation label – F1

The Confirmation label appearing for 30 seconds showing which computer is currently accessed can be positioned anywhere on the screen.

To position the label from the **Main** window:

1. Navigate to a computer line using the **Up** and **Down** arrow keys.
2. Press **F1**. The selected screen image and Confirmation label appear.
3. Use the arrow keys to move the label to the desired position.
4. Press **Esc** to save and exit.

22.5 Tuning – F5

You can tune the image of any computer screen from the **Main** window.

To adjust the screen image:

1. Navigate to the computer line you wish to adjust.
2. Press **F5**. The screen image of the selected computer appears, together with the Image Tuning label, see Figure 30.

Figure 30 Image Tuning label

3. Adjust the image by using the **Right** and **Left** Arrow keys.
4. When the image is satisfactory, press **Esc**.

Note! Picture quality is relative to distance. The further away a computer is from the Smart 216, the lower the image quality, and the more tuning needed. So place the higher resolution computers closer to the Switch.

22.6 The Settings window - F2

Press **F2**. The Settings window appears see Figure 31.

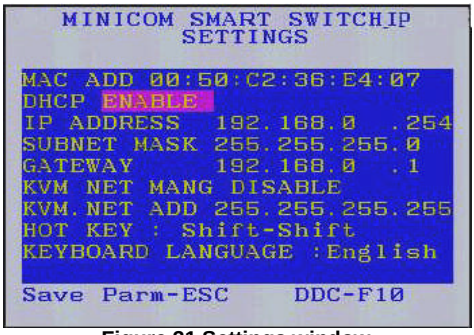


Figure 31 Settings window

In the Settings window navigate downwards using the **Tab** key. At the bottom of the window, press **Tab** to go to the top of the window. Change settings by typing in the selected area or by pressing the spacebar – whichever is relevant.

[Changing the network parameters from the OSD is explained with the initial configuration on page 11].

From In the Settings window you can do the following:

HOT KEY – By pressing **Shift**, **Shift** the OSD appears. You can replace **Shift**, **Shift** with any of the following:

- **Ctrl**, **Ctrl**
- **Ctrl**, **F11**
- **Print Screen**

Press the Spacebar to toggle between options.

To display the OSD press the new hotkey.

KEYBOARD LANGUAGE - Press the **Spacebar** to toggle between the language options. It can be changed to French or German.

22.7 DDC – F10

Display Data Channel (DDC) is a VESA standard for communication between a monitor and a video adapter.

From the **Settings** window, input the DDC information of the monitor connected to the Smart 216 switch into the memories of all connected ROCs when first installing system.

To input the DDC information:

Press **F10**. "Please wait" flashes a few times and disappears. The monitor's DDC information is sent to all ROCs and stored in their memory.

22.7.1.1 Updating the DDC information

Update the DDC information in any of the following circumstances:

- When replacing the monitor connected to Smart 216 Switch
- When adding a new ROC to the system
- When reconnecting an existing ROC that was temporarily used in a different system

To update the DDC information, repeat the steps as set out above.

22.8 Saving changes to the settings

To save changes to the settings and return to the **Main** window, press **Esc**.

23. Technical specifications

Server operating systems	Windows, Novell, Linux, SUN Solaris
Resolution	Up to 1600 x 1200 @ 85Hz
Distance from Switch to ROCs	Up to 30m/100ft.
System cable	CAT5 UTP/FTP Solid Wire 2x4x24 AWG
Connections	**Ethernet** – RJ45 – 10/100 Mbit/sec autosensing **RPS** – RJ45 **2 x KVM connection** – Screen HDD15, Keyboard./Mouse – 2 x USB **Servers** – RJ45 x 16 for the Smart 216 and RJ45 x 32 for the Smart 232
Weight	2.343Kg / 5.165lbs
Dimensions (H x D x W)	44 x 270 x 431 mm / 1.7 x 10.6 x 17"
Power input	100 – 240 VAC, 0.8 A, 50 / 60 Hz.
Operating temperature	0°C to 40°C / 32°F to 104°F
Storage temperature	-40°C to 70°C / -40°F to 158°F
Humidity	80% non condensing relative humidity

	ROC PS/2	**ROC USB**
Connections	VGA - HDD15 Keyboard/Mouse - MiniDin6 System - RJ45	VGA - HDD15 Keyboard/Mouse - USB System - RJ45
Power supply	From Keyboard port	From USB port
Product weight	100g / 0.20lb	
Shipping weight	172g / 0.38lb	
Dimensions	65 x 25 x 25mm / 0.21 x 0.08 x 0.08”	

24. Safety

This device contains no serviceable parts. Any servicing of the device must be performed by an authorized Minicom Technician in a Minicom authorized Service Center.

25. WEEE compliance

WEEE Information for Minicom Customers and Recyclers

Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Minicom they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Instructions to both customers and recyclers/treatment facilities wishing to obtain disassembly information are provided in our website www.minicom.com.

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